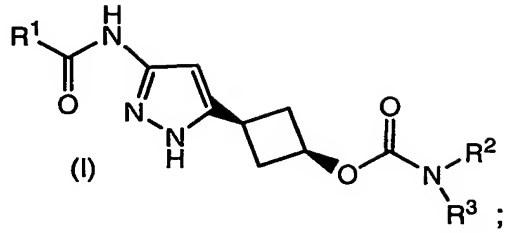
CLAIMS

1. A compound of formula (I)



(I)

a prodrug thereof, or a pharmaceutically acceptable salt of said compound or said prodrug, wherein:

R^1 is:

(A) -(C_1-C_6)alkyl, optionally substituted independently with from one to three (a) halogen; (b) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl; trifluoromethyl; or -(C_1-C_6)alkoxy; (c) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; -(C_1-C_6)alkyl; or -C(O)(C_1-C_6)alkyl; (d) -OR^5; (e) -(C_3-C_8)cycloalkyl; or (f) heterocycloalkyl;

(B) -(C_3-C_8)cycloalkyl, optionally substituted independently with from one to three (g) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl; trifluoromethyl; or -(C_1-C_6)alkoxy; (h) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; -(C_1-C_6)alkyl; or -C(O)(C_1-C_6)alkyl; (i) heterocycloalkyl; (j) -OR^5; or (k) -(C_1-C_6)alkyl, optionally substituted with from one to three halogen;

(C) heterocycloalkyl, optionally substituted with from one to three (l) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl; trifluoromethyl; or -(C_1-C_6)alkoxy; (m) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; -(C_1-C_6)alkyl; or -C(O)(C_1-C_6)alkyl; (n) -(C_3-C_8)cycloalkyl; (o) heterocycloalkyl; (p) -OR^5; or (q) -(C_1-C_6)alkyl, optionally substituted with from one to three halogen; or

(D) heteroaryl, optionally substituted with from one to three -(C_1-C_6)alkyl or trifluoromethyl;

R^2 and R^3 are, independently,

(E) hydrogen;

(F) -(C_1-C_6)alkyl, optionally substituted independently with from one to three (r) halogen; (s) aryl, optionally substituted independently with from one to three

halogen; trifluoromethyl; -(C_1-C_6)alkyl, or -(C_1-C_6)alkoxy, optionally substituted with from one to three fluorine atoms; (t) heteroaryl, optionally substituted independently with from one to three nitro; -(C_1-C_6)alkyl; trifluoromethyl; halogen; or -(C_1-C_6)alkoxy; (u) heterocycloalkyl, optionally substituted independently with one to three -(C_1-C_6)alkyl; oxo; aryl; or heteroaryl; (v) -(C_3-C_8)cycloalkyl, optionally substituted independently with from one to three cyano or aryl; (w) -NHR^4; (x) -OR^5; (y) -N[(C_1-C_6)alkyl]$_2$; or (z) cyano;

(G) -(C_3-C_8)cycloalkyl, optionally substituted independently with from one to three cyano or aryl;

(H) aryl, optionally substituted independently with from one to three halogen; -(C_1- C_6)alkoxy; trifluoromethyl; or -(C_1-C_6)alkyl;

(I) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl or -(C_1-C_6)alkoxy; or

(J) heterocycloalkyl, optionally substituted with from one to three -(C_1-C_6)alkyl, optionally substituted with aryl; or

R^2 and R^3, taken together with the nitrogen atom to which they are attached, form a heterocycloalkyl ring, optionally substituted independently with (aa) -(C_1-C_6)alkyl, optionally substituted with -R^4 or -OR^5; (bb) aryl; (cc) heteroaryl; (dd) -N[(C_1-C_6)alkyl]R^4; (ee) -R^4; or (ff) -(C_1-C_6)alkoxy;

R^4 is (K) -(C_1-C_6)alkyl; (L) -C(O)(C_1-C_6)alkyl; (M) -C(O)O(C_1-C_6)alkyl, optionally substituted with aryl; (N) aryl; (O) heteroaryl; or (P) heterocycloalkyl, wherein each (N) aryl, (O) heteroaryl, or (P) heterocycloalkyl group is optionally substituted independently with from one to three (gg) halogen; (hh) nitro; (ii) trifluoromethyl; (jj) -(C_1-C_6)alkyl; or (kk) -N[(C_1-C_6)alkyl][C(O)(C_1-C_6)alkyl]; and

R^5 is (Q) -(C_1-C_6)alkyl; (R) -C(O)(C_1-C_6)alkyl; (S) aryl; (T) heteroaryl; or (U) heterocycloalkyl, wherein each (S) aryl, (T) heteroaryl, or (U) heterocycloalkyl group is optionally substituted independently with from one to three (ll) halogen; (mm) nitro; (nn) trifluoromethyl; (oo) -(C_1-C_6)alkyl; or (pp) -N[(C_1-C_6)alkyl][C(O)(C_1-C_6)alkyl].

2. A compound of claim 1, wherein:

R^1 is:

(A) -(C_1-C_6)alkyl, optionally substituted independently with (b) heteroaryl, optionally substituted independently with -(C_1-C_6)alkyl; trifluoromethyl; or -(C_1-

C_6)alkoxy; (c) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; -(C_1-C_6)alkyl; (d) -OR^5; or (f) heterocycloalkyl;

(B) -(C_3-C_8)cycloalkyl, optionally substituted independently with (g) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl; trifluoromethyl; or -(C_1-C_6)alkoxy; (h) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; or -(C_1-C_6)alkyl; (i) heterocycloalkyl; (j) -OR^5; (k) -(C_1-C_6)alkyl, optionally substituted with from one to three halogen;

(C) heterocycloalkyl, optionally substituted with (l) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl; trifluoromethyl; or -(C_1-C_6)alkoxy; (m) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; -(C_1-C_6)alkyl; or -C(O)(C_1-C_6)alkyl; (n) -(C_3-C_8)cycloalkyl; (o) heterocycloalkyl; (p) -OR^5; or (q) -(C_1-C_6)alkyl, optionally substituted with from one to three halogen;

R^2 is hydrogen or -(C_1-C_6)alkyl;

R^3 is:

(F) -(C_1-C_6)alkyl, optionally substituted independently with from one to three (r) halogen; (s) aryl, optionally substituted independently with from one to three halogen; trifluoromethyl; -(C_1-C_6)alkyl, or -(C_1-C_6)alkoxy, optionally substituted with from one to three fluorine atoms; (t) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl; trifluoromethyl; halogen; or -(C_1-C_6)alkoxy; (u) heterocycloalkyl, optionally substituted independently with one to three -(C_1-C_6)alkyl; oxo; aryl; or heteroaryl; (v) -(C_3-C_8)cycloalkyl; (w) -NHR^4; (x) -OR^5; (y) -N[(C_1-C_6)alkyl]$_2$; or (z) cyano;

(G) -(C_3-C_8)cycloalkyl, optionally substituted independently with from one to three cyano or aryl; or

(J) heterocycloalkyl, optionally substituted with from one to three -(C_1-C_6)alkyl, optionally substituted with aryl; or

R^2 and R^3, taken together with the nitrogen atom to which they are attached, form a heterocycloalkyl ring, optionally substituted independently with (aa) -(C_1-C_6)alkyl, optionally substituted with -R^4 or -OR^5; (bb) aryl; (cc) heteroaryl; or (ff) -(C_1-C_6)alkoxy;

R^4 is (K) -(C_1-C_6)alkyl; (N) aryl; (O) heteroaryl; or (P) heterocycloalkyl, wherein each aryl, heteroaryl, or heterocycloalkyl group is optionally substituted independently with from one to three (gg) halogen; (ii) trifluoromethyl; or (jj) -(C_1-C_6)alkyl; and

R^5 is (Q) -(C_1-C_6)alkyl; (S) aryl; (T) heteroaryl; or (U) heterocycloalkyl, wherein each (S) aryl, (T) heteroaryl, or (U) heterocycloalkyl group is optionally substituted independently with from one to three (ll) halogen; (nn) trifluoromethyl; or (oo) -(C_1-C_6)alkyl.

3. A compound of claim 1, wherein:

R^1 is:

(A) -(C_1-C_6)alkyl, optionally substituted independently with (b) heteroaryl, optionally substituted independently with -(C_1-C_6)alkyl or -(C_1-C_6)alkoxy; (c) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; or -(C_1-C_6)alkyl; or (d) -OR^5;

(B) -(C_3-C_8)cycloalkyl, optionally substituted independently with (g) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl or -(C_1-C_6)alkoxy; (h) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; or -(C_1-C_6)alkyl; (j) -OR^5; (k) -(C_1-C_6)alkyl, optionally substituted with from one to three halogen; or

(C) heterocycloalkyl, optionally substituted with (l) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl or -(C_1-C_6)alkoxy; (m) aryl, optionally substituted independently with from one to three halogen; -(C_1-C_6)alkoxy; trifluoromethyl; or -(C_1-C_6)alkyl; (p) -OR^5; or (q) -(C_1-C_6)alkyl, optionally substituted with from one to three halogen;

R^2 is hydrogen or -(C_1-C_6)alkyl;

R^3 is:

(F) -(C_1-C_6)alkyl, optionally substituted independently with (s) aryl, optionally substituted independently with from one to three halogen; trifluoromethyl; -(C_1-C_6)alkyl, or -(C_1-C_6)alkoxy, optionally substituted with from one to three fluorine atoms; (t) heteroaryl, optionally substituted independently with from one to three -(C_1-C_6)alkyl or trifluoromethyl; and

R^5 is (S) aryl, optionally substituted with halogen.

4. The compound:

benzyl-carbamic acid *cis*-3-[5-(cyclohexanecarbonyl-amino)-1H-pyrazol-3-yl]-cyclobutyl ester;

benzyl-carbamic acid *cis*-3-(5-isobutyrylamino-1H-pyrazol-3-yl)-cyclobutyl ester;

benzyl-carbamic acid *cis*-3-[5-(2-methyl-2-phenyl-propionylamino)-2H-pyrazol-3-yl]-cyclobutyl ester;

benzyl-carbamic acid *cis*-3-{5-[(4-methyl-tetrahydro-pyran-4-carbonyl)-amino]-2H-pyrazol-3-yl}-cyclobutyl ester;

benzyl-carbamic acid *cis*-3-[5-(2,2-dimethyl-propionylamino)-2H-pyrazol-3-yl]-cyclobutyl ester;

benzyl-carbamic acid *cis*-3-{5-[(tetrahydro-pyran-4-carbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester;

benzyl-carbamic acid *cis*-3-[5-(2-methyl-2-pyridin-2-yl-propionylamino)-2H-pyrazol-3-yl]-cyclobutyl ester;

benzyl-methyl-carbamic acid *cis*-3-{5-[(tetrahydro-pyran-4-carbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester;

butyl-carbamic acid *cis*-3-[5-(2,2-dimethyl-propionylamino)-1H-pyrazol-3-yl]-cyclobutyl ester;

(2-chloro-benzyl)-carbamic acid *cis*-3-{5-[(tetrahydro-pyran-4-carbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester;

(2,6-difluoro-benzyl)-carbamic acid *cis*-3-(5-isobutyrylamino-2H-pyrazol-3-yl)-cyclobutyl ester;

(2,6-difluoro-benzyl)-carbamic acid *cis*-3-{5-[(1-methyl-cyclohexanecarbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester;

(2-ethyl-butyl)-carbamic acid *cis*-3-(5-isobutyrylamino-2H-pyrazol-3-yl)-cyclobutyl ester;

(2-fluoro-benzyl)-carbamic acid *cis*-3-{5-[((R)-tetrahydro-furan-2-carbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester;

isobutyl-carbamic acid *cis*-3-(5-phenylacetylamino-2H-pyrazol-3-yl)-cyclobutyl ester;

(2-phenyl-propyl)-carbamic acid *cis*-3-{5-[((R)-tetrahydro-furan-2-carbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester;

pyridin-2-ylmethyl-carbamic acid *cis*-3-[5-(cyclopentanecarbonyl-amino)-1H-pyrazol-3-yl]-cyclobutyl ester;

pyridin-2-ylmethyl-carbamic acid *cis*-3-[5-(2,2-dimethyl-propionylamino)-1H-pyrazol-3-yl]-cyclobutyl ester;

thiophen-2-ylmethyl-carbanic acid *cis*-3-{5-[((R)-tetrahydro-furan-2-carbonyl)-amino]-1H-pyrazol-3-yl}-cyclobutyl ester; or

(2-trifluoromethyl-benzyl)-carbamic acid *cis*-3-(5-isobutyrylamino-2H-pyrazol-3-yl)-cyclobutyl ester; a prodrug thereof, or a pharmaceutically acceptable salt of said compound or said prodrug.

5. A pharmaceutical composition comprising an amount of a compound of claim 1, a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug, and a pharmaceutically acceptable carrier, vehicle, or diluent.

6. A method of inhibiting cdk2, cdk5, and/or GSK-3 activity in a mammal in need of such inhibition, which method comprises administering to said mammal a cdk2, cdk5, and/or GSK-3 activity inhibiting amount of a compound of formula (I), a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug; or a pharmaceutical composition comprising a cdk2, cdk5, and/or GSK-3 activity inhibiting amount of said compound of formula (I), a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug, and a pharmaceutically acceptable carrier, vehicle, or diluent.

7. A method of treating a cdk2, cdk5, and/or GSK-3 mediated condition, which method comprises administering to a mammal in need of such treatment a therapeutically effective amount of a compound of formula (I), a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug; or a therapeutically effective amount of a pharmaceutical composition comprising said compound of formula (I), said prodrug thereof, or said pharmaceutically acceptable salt of said compound or prodrug, and a pharmaceutically acceptable carrier, vehicle, or diluent.

8. A method of claim 7, wherein said cdk2, cdk5, and/or GSK-3 mediated condition is Alzheimer's Disease, asthma, atherosclerosis, anxiety, bipolar disorder, cancer, diabetes, dementia, depression, frailty, hair loss, heart failure, essential hypertension, hyperglycemia, hyperlipidemia, hypoglycemia, inflammation, ischemia, male fertility and sperm motility, mood disorders, neuronal cell death, obesity, obsessive

compulsive disorder, polycystic ovary disorder, schizophrenia, stroke, Syndrome X, and traumatic brain injury.

8. A pharmaceutical composition comprising an amount of a compound of claim 1, a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug; an amount of one or more of: (i) an anti-angiogenesis agent, (ii) a signal transduction inhibitor, (iii) an anti-proliferative agent, (iv) an NK-1 receptor antagonist, (v) a $5HT_{1D}$ receptor antagonist, (vi) a selective serotonin reuptake inhibitor (SSRI), (vii) an anti-psychotic agent, (viii) an acetylcholinesterase inhibitor, (ix) a neuroprotectant, (x) tissue plasminogen activator (TPA), (xi) neutrophil inhibitory factor (NIF), or (xii) a potassium channel modulator; and a pharmaceutically acceptable carrier, vehicle, or diluent.

9. A method of treating cdk2, cdk5, and/or GSK-3 mediated conditions, diseases, or symptoms in a mammal in need of such treatment, which methods comprise administering to said mammal a therapeutically effective amount of a combination of a compound of formula (I), a prodrug thereof, or a pharmaceutically acceptable salt of the compound or prodrug, and one or more of: (i) an anti-angiogenesis agent, (ii) a signal transduction inhibitor, (iii) an anti-proliferative agent, (iv) an NK-1 receptor antagonist, (v) a $5HT_{1D}$ receptor antagonist, (vi) a selective serotonin reuptake inhibitor (SSRI), (vii) an anti-psychotic agent, (viii) an acetylcholinesterase inhibitor, (ix) a neuroprotectant, (x) tissue plasminogen activator (TPA), (xi) neutrophil inhibitory factor (NIF), and (xii) a potassium channel modulator; or a therapeutically effective amount of a pharmaceutical composition comprising said combinations.

10. A method of claim 9, wherein said cdk2, cdk5, and/or GSK-3 mediated condition is Alzheimer's Disease, asthma, atherosclerosis, anxiety, bipolar disorder, cancer, diabetes, dementia, depression, frailty, hair loss, heart failure, essential hypertension, hyperglycemia, hyperlipidemia, hypoglycemia, inflammation, ischemia, male fertility and sperm motility, mood disorders, neuronal cell death, obesity, obsessive compulsive disorder, polycystic ovary disorder, schizophrenia, stroke, Syndrome X, and traumatic brain injury.